Aeronautics Educator Guide			
2009 Mathematics			
Core Curriculum			
Iowa Mathematics			
Grades K-2			
Activity/Lesson	**State**	**Standards**	
Air Engines (12-16)	IA	MA.K-2.4.1.1	Identify attributes that are measurable such as length, volume, weight, and area. Use these attributes and appropriate language to make direct comparisons. (Taller, shorter, longer, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount).
Air Engines (12-16)	IA	MA.K-2.4.1.3	Use a seriated set of objects to order and compare lengths.
Air Engines (12-16)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Air Engines (12-16)	IA	MA.K-2.4.2.1	Select appropriate measurement tools and units (standard and non-standard) to solve problems.
Air Engines (12-16)	IA	MA.K-2.4.3.2	Use a variety of non-standard units to measure length without gaps or overlaps.
Air Engines (12-16)	IA	MA.K-2.4.3.8	Select appropriate measurement tools and units (standard and non-standard) to solve problems.
Rotor Motor (69-75)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Rotor Motor (69-75)	IA	MA.K-2.5.1.2	Collect, organize, represent, and interpret data in bar-type graphs, picture graphs, frequency tables, and line plots.
Rotor Motor (69-75)	IA	MA.K-2.5.2.1	Represent a collection of data using tallies, tables, picture graphs and bar graphs.
Flight: Interdisciplinary Learning Activities (76-79)	IA	MA.K-2.1.1.1	Count, represent, read, compare, order, and conserve whole numbers up to 1000.
Flight: Interdisciplinary Learning Activities (76-79)	IA	MA.K-2.1.1.3	Count by tens or hundreds, forwards and backwards, starting at any number from 1 to 1000.
Flight: Interdisciplinary Learning Activities (76-79)	IA	MA.K-2.5.1.1	Collect and organize data in lists, tables, and simple graphs.
Flight: Interdisciplinary Learning Activities (76-79)	IA	MA.K-2.5.2.2	Compare a single data set using different types of graphs.

Flight: Interdisciplinary Learning Activities (76-79)	IA	MA.K-2.5.3.5	Use information from data to make observations and inferences, draw conclusions, and make predictions.
Where is North? The Compass Can Tell Us (87-90)	IA	MA.K-2.5.3.5	Use information from data to make observations and inferences, draw conclusions, and make predictions.
Let's Build a Table Top Airport (91-96)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Plan to Fly There (97-106)	IA	MA.K-2.3.4.3	Represent points and simple figures on maps using simple coordinate grids with letters and numbers.
Plan to Fly There (97-106)	IA	MA.K-2.4.3.4	Associate the time of day with everyday events.
Plan to Fly There (97-106)	IA	MA.K-2.4.3.5	Name standard units of time (day, week, month).
Plan to Fly There (97-106)	IA	MA.K-2.4.3.10	Describe the relationship among standard units of time: minutes, hours days, weeks, months and years.
We Can Fly, You and I: Interdisciplinary Learning (107-108)	IA	MA.K-2.4.3.4	Associate the time of day with everyday events.
We Can Fly, You and I: Interdisciplinary Learning (107-108)	IA	MA.K-2.4.3.5	Name standard units of time (day, week, month).
We Can Fly, You and I: Interdisciplinary Learning (107-108)	IA	MA.K-2.4.3.10	Describe the relationship among standard units of time: minutes, hours days, weeks, months and years.
We Can Fly, You and I: Interdisciplinary Learning (107-108)	IA	MA.K-2.5.1.1	Collect and organize data in lists, tables, and simple graphs.
Dunked Napkin (17-22)	IA	MA.K-2.5.1.3	Use interviews, surveys, and observations to collect data that answers questions about themselves and their surroundings.
Dunked Napkin (17-22)	IA	MA.K-2.5.3.5	Use information from data to make observations and inferences, draw conclusions, and make predictions.
Paper Bag Mask (23-28)	IA	MA.K-2.3.1.1	Identify, name, sort, and describe two- and three-dimensional shapes (including circles, triangles, rectangles, squares, cubes, and spheres), and real-world approximations of the shapes, regardless of size or orientation.
Paper Bag Mask (23-28)	IA	MA.K-2.3.3.1	Describe characteristics of two- and three-dimensional objects (number of corners, edges, and sides, length of sides, etc.).
Paper Bag Mask (23-28)	IA	MA.K-2.4.1.1	Identify attributes that are measurable such as length, volume, weight, and area. Use these attributes and appropriate language to make direct comparisons. (Taller, shorter, longer, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount).

Paper Bag Mask (23-28)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Paper Bag Mask (23-28)	IA	MA.K-2.4.2.1	Select appropriate measurement tools and units (standard and non-standard) to solve problems.
Paper Bag Mask (23-28)	IA	MA.K-2.4.3.2	Use a variety of non-standard units to measure length without gaps or overlaps.
Paper Bag Mask (23-28)	IA	MA.K-2.4.3.7	Estimate and measure length using metric and customary units.
Paper Bag Mask (23-28)	IA	MA.K-2.4.3.8	Select appropriate measurement tools and units (standard and non-standard) to solve problems.
Paper Bag Mask (23-28)	IA	MA.K-2.5.3.5	Use information from data to make observations and inferences, draw conclusions, and make predictions.
Wind in Your Socks) (29-35)	IA	MA.K-2.2.3.3	Use commutative and associative properties and mathematical reasoning to solve a variety of addition and subtraction problems involving two or more one-digit numbers; justify the solution.
Wind in Your Socks) (29-35)	IA	MA.K-2.4.1.1	Identify attributes that are measurable such as length, volume, weight, and area. Use these attributes and appropriate language to make direct comparisons. (Taller, shorter, longer, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount).
Wind in Your Socks) (29-35)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Wind in Your Socks) (29-35)	IA	MA.K-2.4.2.1	Select appropriate measurement tools and units (standard and non-standard) to solve problems.
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Wind in Your Socks) (29-35)	IA	MA.K-2.4.3.7	Estimate and measure length using metric and customary units.
Wind in Your Socks) (29-35)	IA	MA.K-2.4.3.8	Select appropriate measurement tools and units (standard and non-standard) to solve problems.
Wind in Your Socks) (29-35)	IA	MA.K-2.5.1.1	Collect and organize data in lists, tables, and simple graphs.
Wind in Your Socks) (29-35)	IA	MA.K-2.5.3.5	Use information from data to make observations and inferences, draw conclusions, and make predictions.
Air: Interdisciplinary Learning Activities (36-39)	IA	MA.K-2.4.1.1	Identify attributes that are measurable such as length, volume, weight, and area. Use these attributes and appropriate language to make direct comparisons. (Taller, shorter, longer, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount).

Activity/Lesson	State	Standards	
Sled Kite (44-51)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Right Flight (52-59)	IA	MA.K-2.4.1.1	Identify attributes that are measurable such as length, volume, weight, and area. Use these attributes and appropriate language to make direct comparisons. (Taller, shorter, longer, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount).
Right Flight (52-59)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Right Flight (52-59)	IA	MA.K-2.5.3.5	Use information from data to make observations and inferences, draw conclusions, and make predictions.
Delta Wing Glider (60-68)	IA	MA.K-2.4.1.1	Identify attributes that are measurable such as length, volume, weight, and area. Use these attributes and appropriate language to make direct comparisons. (Taller, shorter, longer, same length; heavier, lighter, same weight; holds more, holds less, holds the same amount).
Delta Wing Glider (60-68)	IA	MA.K-2.4.1.4	Recognize that objects used to measure an attribute (length, weight, capacity) must have that attribute and must be consistent in size.
Delta Wing Glider (60-68)	IA	MA.K-2.5.3.5	Use information from data to make observations and inferences, draw conclusions, and make predictions.
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Grades 3-5			
Activity/Lesson	**State**	**Standards**	
Air Engines (12-16)	IA	MA.3-5.3.6.1	Select appropriate units, strategies, and tools to solve problems that involve estimating and measuring perimeter, area and volume.
Air Engines (12-16)	IA	MA.3-5.3.6.5	Select and apply appropriate units, strategies and tools to solve problems that involve estimating and measuring weight, time and temperature.
Rotor Motor (69-75)	IA	MA.3-5.4.1.4	Use their understanding of whole numbers, fractions, and decimals to construct and analyze circle graphs and line graphs.
Rotor Motor (69-75)	IA	MA.3-5.4.3.4	Design investigations to address a question and consider how data collection methods affect the nature of the data set.
Flight: Interdisciplinary Learning Activities (76-79)	IA	MA.3-5.4.1.4	Use their understanding of whole numbers, fractions, and decimals to construct and analyze circle graphs and line graphs.

Where is North? The Compass Can Tell Us (87-90)	IA	MA.3-5.4.3.4	Design investigations to address a question and consider how data collection methods affect the nature of the data set.
Let's Build a Table Top Airport (91-96)	IA	MA.3-5.3.6.5	Select and apply appropriate units, strategies and tools to solve problems that involve estimating and measuring weight, time and temperature.
Plan to Fly There (97-106)	IA	MA.3-5.3.6.5	Select and apply appropriate units, strategies and tools to solve problems that involve estimating and measuring weight, time and temperature.
We Can Fly, You and I: Interdisciplinary Learning (107-108)	IA	MA.3-5.3.6.5	Select and apply appropriate units, strategies and tools to solve problems that involve estimating and measuring weight, time and temperature.
We Can Fly, You and I: Interdisciplinary Learning (107-108)	IA	MA.3-5.4.1.3	Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.
Dunked Napkin (17-22)	IA	MA.3-5.4.1.3	Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.
Dunked Napkin (17-22)	IA	MA.3-5.4.3.1	Learn how to describe data, make a prediction to describe the data, and then justify their predictions.
Dunked Napkin (17-22)	IA	MA.3-5.4.3.2	Learn to collect data using observations, surveys and experiments and propose conjectures.
Dunked Napkin (17-22)	IA	MA.3-5.4.3.4	Design investigations to address a question and consider how data collection methods affect the nature of the data set.
Paper Bag Mask (23-28)	IA	MA.3-5.3.2.1	Understand attributes and properties of two-dimensional space through building, drawing and analyzing two-dimensional shapes and use the attributes and properties to solve problems, including applications involving congruence and symmetry.
Paper Bag Mask (23-28)	IA	MA.3-5.3.5.1	Develop measurement concepts and skills through experiences in analyzing attributes and properties of two- and three-dimensional objects.
Paper Bag Mask (23-28)	IA	MA.3-5.3.6.1	Select appropriate units, strategies, and tools to solve problems that involve estimating and measuring perimeter, area and volume.
Paper Bag Mask (23-28)	IA	MA.3-5.3.6.2	Develop facility in measuring with fractional parts of linear units.
Paper Bag Mask (23-28)	IA	MA.3-5.3.6.5	Select and apply appropriate units, strategies and tools to solve problems that involve estimating and measuring weight, time and temperature.

Wind in Your Socks) (29-35)	IA	MA.3-5.4.3.4	Design investigations to address a question and consider how data collection methods affect the nature of the data set.
Wind in Your Socks) (29-35)	IA	MA.3-5.4.5.2	Learn to estimate the probability of events as certain, equally likely or impossible by designing simple experiments to collect data and draw conclusions.
Bag Balloons (40-43)	IA	MA.3-5.4.3.4	Design investigations to address a question and consider how data collection methods affect the nature of the data set.